UNITED STATES PATENT AND TRADEMARK OFFICE

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10/587,040	07/24/2006	Masahiro Nakamura	062796	2001

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EXAMINER
RAO, SHEELA S

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2006*.

2a)☐ This action is **FINAL**.　　　　2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☒ All　b)☐ Some * c)☐ None of:

　　　1.☒ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date *7/24/06*.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This Office action responds to papers filed on 24 July 2006.

2.   Claims 1-56 are pending and presented for examination.

3.   Applicant's submission of references on form PTO-1449, filed on July 24, 2006, has been considered. A signed copy of the form is attached.

Objections

4.   The disclosure and claims are objected to because they appear to be a literal translation into English from a foreign language document and are replete with grammatical and idiomatic errors. For example, claims 3-6 state "report means reports the information showing that the components have not the assembly enabled relation" and claim 23 states "Wherein the element working time includes at least one of a man element working time"   Appropriate correction is required.

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6.   Claim 46 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 46 recites to a *"production design support program designed to perform a production design..."*; however it appears that the claim is directed to a program which can be reasonably interpreted by one of

ordinary skill in the art as software, per se, because the elements included in the claim

are just software components (i.e. step that cooperates and manages, step that

displays, step that acquires, etc.). This subject matter is not limited to a process,

machine, manufacture or a composition of matter.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1, 2 and 7-56 are rejected under 35 U.S.C. 103(a) as being unpatentable

over *"CAD on the World Wide Web: Virtual Assembly of Furniture with BEAVER"* by

Nousch et al. in view of US Patent Application Publication No. US 2005/0149219 A1 to

Lilly et al.

The limitations of the instant invention are taught and/or fairly suggested by the

references of prior art as aforementioned as follows.

Claims 1 and 46 are directed to a production design facility designed to be

capable of performing a production design of a prescribed product present in a real

space and formed by assembling prescribed components, by displaying the

components in a virtual space. The facility and program, respectively claimed by claims

1 and 46, comprise: cooperation management means for associating assembly

procedure data showing combination of the assembly enabled components and

assembling order thereof with component object data for displaying the component in

the virtual space as a component object and managing them – taught by Nousch et al.

(hereinafter referred to as "Nousch") as the knowledge database and explained in

section 4.1 on page 117; object display means for displaying the component object in

the virtual space based on the component object data – described by Nousch in section

3 on page 114; coordinate data acquisition means for acquiring coordinate data of the

component object displayed in the virtual space by the object display means – taught in

Figure 7 in section 4.2 on page 118 as the navigation console. Although Nousch

teaches the elements of the production design facility, the reference of prior art falls

short of teaching a working time output means or scheduling element. For this reason,

the prior art of Lilly et al. (hereinafter referred to as "Lilly") is relied upon. With regard to

the element working time output means for outputting an element working time required

for an assembly of the components, on the basis of each coordinate data of one

component object and the other component objects acquired by the coordinate data

acquisition means, and assembly procedure data related to the objects and

cooperatively managed by the cooperation means is taught by Lilly in paragraph [0011]

as the reference teaches of method and means for scheduling works orders for

manufacturing products based upon the availability of resources and materials in the

manufacturing environment. It would have been obvious to one of ordinary skill in the

art at the time the invention was made to have included the scheduling method and

means as taught by Lilly with the virtual production design facility of Nousch so as to

formulate a working time or schedule for assembly of components based upon the availability of resources and materials for the timely and accurate production and completion of objects in a facility.

With regard to claims 2 and 30 the design facility further includes an assembly enabled relation determination means for determining whether or not the components are related to the component object displayed in the virtual space have assembly enabled relationships. Nousch teaches this aspect in section 3.2 on page 115 where a snapping mechanism is provided to verify the components enable relationship.

Claim 7 is directed to a object moving instruction reception means for receiving an instruction to move the component object displayed in the virtual space to an arbitrary position in the virtual space and the display means is adapted to display the component according to the moving instruction. The prior art by Nousch teaches this in Figure 3 on page 115 and explains it in section 3.2 on page 116, where the mouse is used to drag and drop the object and the program interprets this as the command to add or remove the object.

Claim 8 further defines the instant invention as including a component supply unit for supplying a prescribed component in the virtual space as a component supply unit object, based on component supply unit object data, along with the cooperation management means and the object moving instruction reception means. The document by Nousch teaches this aspect in section 3.3 on page 116 as a shopping list is generated.

Claim 9 requires the virtual space to be composed of one or a plurality of virtual space elements comprising a joint capable of mutually connecting the virtual space element, the component object, and the component supply unit object, wherein the movement of the object to the arbitrary position in the virtual space is adapted to perform according to the joint. Nousch teaches this in section 3 on page 115 where the hinges and other fittings are described.

Claim 10 states the assembly procedure data reception means as receiving assembly procedure data related to the prescribed product or for receiving the assembly procedure data related to other product different from the prescribed product and Nousch teaches this element in section 3.3 on page 116.

Claim 11 includes an assembly procedure data edit instruction reception means for receiving an instruction to edit at least one of the data of a combination and an assembling order of the component in the assembly procedure data. Nousch teaches this in section 3.2 on page 116 where how a modification is handled is explained.

Claims 12-15 are directed to associating the components with component numbers where the automated system includes metadata that is used for fitting determination and enables searching a database containing data regarding each of the components and their fittings. Nousch includes a knowledge database that is divided into sections that stores pertinent information regarding the parts and components of the virtually assembled products in section 4.1 on page 117.

Claim 16 requires a storage means for storing the assembly procedure data and the component object data. The invention by Nousch is one that uses a computer and a

CAD system, the use of computing technology inherently incorporates/includes a storage means.

Claim 17 calls for a graphic element work display means for displaying on screen the element working time outputted within the production design system. Nousch teaches the use of a graphical user interface, i.e. display means. In addition, Lilly teaches the use of a scheduling system and a screen for displaying the schedule as explained in paragraph [0141].

Claim 18 cites the use of one or a plurality of steps to complete the assembly of a product. Section 3 of the Nousch reference teaches the steps taken for assembly of a closet.

Claim 19 requires the prescribed order to be a work order. Lilly teaches the use of work orders in the abstract of the published document.

Claim 20 includes a graphic element work display change instruction reception means for receiving a display change instruction related to the change of a display such as an addition, deletion, and rearrangement of the graphic element work. Nousch teaches this aspect in section 3 on page 114.

Claim 21 calls for an assembly enabled relation determination means for determining whether or not the components are related to a component displayed in a virtual space have an assembly enabled relation. Nousch teaches this in section 3.2 on page 115.

Claim 22 is directed to the work output means outputting a working time corresponding to the component object relationship. Lilly teaches this in paragraph [0011].

Claim 23 requires the element working time to include at least one man element working time showing a working time by a worker and a machine element. Lilly teaches that man-power and machine power are a resource and includes this understanding in the calculation of a working time as explained in paragraphs [0018] and [0024].

Claims 24-25 are directed to the element working time being dependent upon changes by a separation distance between one assembly enabled component object and another. Lilly teaches of multi-level work orders wherein branched sequence of operations is handled; each branch includes operations for manufacturing an intermediate product used in the manufacture of the final product. Each of the operations may or may not be handled by the same machine and could include a distance separating the machines within a facility; hence, this distance must be accounted for in terms of scheduling, see paragraph [0041].

Claim 26 associates worker characteristic data to be stored in a storage means with an individual worker. Lilly equates workers to resources and stores resource information within the storage means, see paragraph [0037].

Claims 27-28 are directed to a tact time parameter that is calculated, set and displayed. In the prior art by Lilly, tact time is similar to a sequence of operations as explained in paragraph [0053].

Claim 29 comprises a step display means for modeling one or a plurality of steps and displaying them on a screen along with change instruction reception means for receiving change instructions related to an addition, deletion and rearrangement of a modeled step. As Nousch explains, the BEAVER system steps through the design and assembly process of designing and building a closet. The virtual design system allows for changes to be made to the design prior to the building of the product as explained in section 3 beginning on page 114.

Claim 31 states that the working time outputs a working time corresponding to the component object related to the step received. As stated above, Lilly teaches that the scheduling means takes into account any changes that are made.

Claims 32-34 include a total weight calculating means for calculating total weight data of one or a plurality of the components; this element is taught by Nousch in section 4.1 on page 117.

Claims 35-37 are directed to a workability information output means for outputting workability information related to a workability of a worker. In section 1 of the document by Nousch, this aspect of the instant invention is addressed.

Claim 38 requires the terminal device and server device of the instant invention to be connected for communication purposes via a communication line network such as the Internet. As stated in section 1, Nousch teaches the use of the Internet over the World Wide Web.

Claims 39-42 and 47-50 require a verification information reception means which is used to show positioning of an object, execution time of the works, and is able to receive information. This feature is taught by Nousch in section 3.1 on page 115.

While claims 43-45 and 51-53 require deviation information output means for outputting, transmitting or correcting deviation information, this element is also taught by Nousch in section 3.1 on page 115.

Claims 54-56 further define the use of a computer means which is a portable and wirelessly communicable terminal device. Although neither Nousch nor Lilly specifically state the use of a portable and wireless computing device, it is inherent that both inventions are for use on a computer and it is well known that a portable and wireless computing device can be used for all the same reasons as that of a wired unit.

9. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over *"CAD on the World Wide Web: Virtual Assembly of Furniture with BEAVER"* by Nousch et al. in view of US Patent Application Publication No. US 2005/0149219 A1 to Lilly et al. as applied to claim 1 above, and further in view of US Patent Application Publication No. US 2002/0184524 A1 to Steele et al.

Claims 3-6 further include a first and second report means for reporting information showing that the components do not have assembly enabled relations in the combination of the components. Although the references of prior art to Nousch and Lilly, taken in combination, teach the components having assembly relationships with other components, they do not teach the presence of reporting means indicating the lack of enabled relations. For this reason, the prior art of Steele et al. (hereinafter

referred to as "Steele") teach of an analysis and corrective action planning method and

means for assessing problems associated with components or assemblies of such. As

described in paragraph [0038], Steele states that problems can be discovered before,

during or after the manufacturing process. Fig. 6 illustrates how a problem or defect is

handled including the generating of reports. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to have included the report

generating aspect of the invention by Steele with the virtual design and assembly of

Nousch/Lilly so as to create a document that identifies any problems or defects that may

have arisen during design and/or assembly for purposes of data logging and

notification.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

> US Patent No. US 7,062,722 B1   Carlin et al.
>   Teaches of a virtual design system and method
>
> US Patent No. US 6,725,184 B1   Gadh et al.
>   Teaches of a CAD model used for assembly/disassembly of components
>
> US Patent Application Publication No. US 2006/0155402 A1   Read
>   Teaches of a three-dimensional manufacturing process

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sheela Rao whose telephone number is (571) 272-

3751. The examiner can normally be reached Monday - Wednesday from 9:00 am to

3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Paul Rodriguez, can be reached on (571) 272-3753. The fax number for the

organization where this application or any proceeding papers has been assigned is

(571) 273- 8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. It should be

noted that status information for unpublished applications is available through Private

PAIR only. For more information about the PAIR system, see **http:// pair-**

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the

automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-

1000.

/Sheela Rao/
Examiner, Art Unit 2123
July 21, 2009

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123